

SEQUENCE LISTING

<110> Ip, Nancy Y
Cheung, William M W

<120> DNA SEQUENCE ENCODING A RETINOIC ACID REGULATED PROTEIN

<130> FP4220B

<150> US 10/409,511

<151> 2003-04-08

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<170> PatentIn version 3.2

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cc 120

ctg atg ctc ttc aat tcg gtg ctc cgc cag ccc cag ctt ggc gtc ctg
168

Met Leu Phe Asn Ser Val Leu Arg Gln Pro Gln Leu Gly Val Leu

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aga aat gga tgg tct tca caa tac cct ctt caa tcc ctt ctg act ggt
216

Arg Asn Gly Trp Ser Ser Gln Tyr Pro Leu Gln Ser Leu Leu Thr Gly

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264

Tyr Gln Cys Ser Gly Asn Asp Glu His Thr Ser Tyr Gly Glu Thr Gly

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Val Pro Val Pro Pro Phe Gly Cys Thr Phe Ser Ser Ala Pro Asn Met

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Glu His Val Leu Ala Val Ala Asn Glu Glu Gly Phe Val Arg Leu Tyr

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aac aca gaa tca caa agt ttc aga aag aag tgc ttc aaa gaa tgg atg
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Asn Thr Glu Ser Gln Ser Phe Arg Lys Lys Cys Phe Lys Glu Trp Met

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gct cac tgg aat gcc gtc ttt gac ctg gcc tgg gtt cct ggt gaa ctt
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Ala His Trp Asn Ala Val Phe Asp Leu Ala Trp Val Pro Gly Glu Leu

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Lys Leu Val Thr Ala Ala Gly Asp Gln Thr Ala Lys Phe Trp Asp Val

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Lys Ala Gly Glu Leu Ile Gly Thr Cys Lys Gly His Gln Cys Ser Leu

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Lys Ser Val Ala Phe Ser Lys Phe Glu Lys Ala Val Phe Cys Thr Gly

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Gly Arg Asp Gly Asn Ile Met Val Trp Asp Thr Arg Cys Asn Lys Lys
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 Asp Gly Phe Tyr Arg Gln Val Asn Gln Ile Ser Gly Ala His Asn Thr
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 Ile Lys Val Trp Asp Leu Arg Lys Asn Tyr Thr Ala Tyr Arg Gln Glu
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 Pro Ile Ala Ser Lys Ser Phe Leu Tyr Pro Gly Ser Ser Thr Arg Lys
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gct aat tgc aca gac gat aac atc tac atg ttt aat atg act ggg ttg
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Ala Asn Cys Thr Asp Asp Asn Ile Tyr Met Phe Asn Met Thr Gly Leu

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aag act tct cca gtg gct att ttc aat gga cac cag aac tct acc ttt
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Lys Thr Ser Pro Val Ala Ile Phe Asn Gly His Gln Asn Ser Thr Phe

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tat gta aaa tcc agc ctt agt cca gat gac cag ttt tta gtc agt ggc
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Tyr Val Lys Ser Ser Leu Ser Pro Asp Asp Gln Phe Leu Val Ser Gly

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Ser Ser Asp Glu Ala Ala Tyr Ile Trp Lys Val Ser Thr Pro Trp Gln

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cct cct act gtg ctc ctg ggt cat tct caa gag gtc acg tct gtg tgc
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Pro Pro Thr Val Leu Leu Gly His Ser Gln Glu Val Thr Ser Val Cys

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Trp Cys Pro Ser Asp Phe Thr Lys Ile Ala Thr Cys Ser Asp Asp Asn

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aca cta aaa atc tgg cgc ttg aat aga ggc tta gag gag aaa cca gga
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Thr Leu Lys Ile Trp Arg Leu Asn Arg Gly Leu Glu Glu Lys Pro Gly

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Gly Asp Lys Leu Ser Thr Val Gly Trp Ala Ser Gln Lys Lys Lys Glu

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Ser Arg Pro Gly Leu Val Thr Val Thr Ser Ser Gln Ser Thr Pro Ala

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Lys Ala Pro Arg Val Lys Cys Asn Pro Ser Asn Ser Ser Pro Ser Ser

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Ala Ala Cys Ala Pro Ser Cys Ala Gly Asp Leu Pro Leu Pro Ser Asn

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Thr Pro Thr Phe Ser Ile Lys Thr Ser Pro Ala Lys Ala Arg Ser Pro

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Ile Asn Arg Arg Gly Ser Val Ser Ser Val Ser Pro Lys Pro Pro Ser

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Ser Phe Lys Met Ser Ile Arg Asn Trp Val Thr Arg Thr Pro Ser Ser

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Ser Pro Pro Ile Thr Pro Pro Ala Ser Glu Thr Lys Ile Met Ser Pro

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Arg Lys Ala Leu Ile Pro Val Ser Gln Lys Ser Ser Gln Ala Glu Ala

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Cys Ser Glu Ser Arg Asn Arg Val Lys Arg Arg Leu Asp Ser Ser Cys

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Leu Glu Ser Val Lys Gln Lys Cys Val Lys Ser Cys Asn Cys Val Thr

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Ala Gly Asn Gln Glu Asp Leu Ser Lys Asp Ser Leu Gly Pro Thr Lys

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Ser Ser Lys Ile Glu Gly Ala Gly Thr Ser Ile Ser Glu Pro Pro Ser

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Pro Ile Ser Pro Tyr Ala Ser Glu Ser Cys Gly Thr Leu Pro Leu Pro

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 Ser Pro Glu Asn Lys Asn Trp Leu Leu Ala Met Ala Ala Lys Arg Lys
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| 1 | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Gly | Trp | Ser | Ser | Gln | Tyr | Pro | Leu | Gln | Ser | Leu | Leu | Thr | Gly | Tyr |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Cys | Ser | Gly | Asn | Asp | Glu | His | Thr | Ser | Tyr | Gly | Glu | Thr | Gly | Val |
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| Pro | Val | Pro | Pro | Phe | Gly | Cys | Thr | Phe | Ser | Ser | Ala | Pro | Asn | Met | Glu |
| | | | | | | | | | | | | | | | |
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His Val Leu Ala Val Ala Asn Glu Glu Gly Phe Val Arg Leu Tyr Asn

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80

Thr Glu Ser Gln Ser Phe Arg Lys Lys Cys Phe Lys Glu Trp Met Ala

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90

95

His Trp Asn Ala Val Phe Asp Leu Ala Trp Val Pro Gly Glu Leu Lys

100

105

110

Leu Val Thr Ala Ala Gly Asp Gln Thr Ala Lys Phe Trp Asp Val Lys

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120

125

Ala Gly Glu Leu Ile Gly Thr Cys Lys Gly His Gln Cys Ser Leu Lys

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135

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Ser Val Ala Phe Ser Lys Phe Glu Lys Ala Val Phe Cys Thr Gly Gly

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Arg Asp Gly Asn Ile Met Val Trp Asp Thr Arg Cys Asn Lys Lys Asp

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Gly Phe Tyr Arg Gln Val Asn Gln Ile Ser Gly Ala His Asn Thr Ser

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Asp Lys Gln Thr Pro Ser Lys Pro Lys Lys Gln Asn Ser Lys Gly

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Leu Ala Pro Ser Val Asp Phe Gln Gln Ser Val Thr Val Val Leu Phe

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Gln Asp Glu Asn Thr Leu Val Ser Ala Gly Ala Val Asp Gly Ile Ile

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Lys Val Trp Asp Leu Arg Lys Asn Tyr Thr Ala Tyr Arg Gln Glu Pro

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Ile Ala Ser Lys Ser Phe Leu Tyr Pro Gly Ser Ser Thr Arg Lys Leu

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Gly Tyr Ser Ser Leu Ile Leu Asp Ser Thr Gly Ser Thr Leu Phe Ala

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Asn Cys Thr Asp Asp Asn Ile Tyr Met Phe Asn Met Thr Gly Leu Lys

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Thr Ser Pro Val Ala Ile Phe Asn Gly His Gln Asn Ser Thr Phe Tyr

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315

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Val Lys Ser Ser Leu Ser Pro Asp Asp Gln Phe Leu Val Ser Gly Ser

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Ser Asp Glu Ala Ala Tyr Ile Trp Lys Val Ser Thr Pro Trp Gln Pro

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Pro Thr Val Leu Leu Gly His Ser Gln Glu Val Thr Ser Val Cys Trp
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Cys Pro Ser Asp Phe Thr Lys Ile Ala Thr Cys Ser Asp Asp Asn Thr
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Asp Lys Leu Ser Thr Val Gly Trp Ala Ser Gln Lys Lys Glu Ser
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Arg Pro Gly Leu Val Thr Val Thr Ser Ser Gln Ser Thr Pro Ala Lys
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Ala Pro Arg Val Lys Cys Asn Pro Ser Asn Ser Ser Pro Ser Ser Ala
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Ala Cys Ala Pro Ser Cys Ala Gly Asp Leu Pro Leu Pro Ser Asn Thr
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Pro Thr Phe Ser Ile Lys Thr Ser Pro Ala Lys Ala Arg Ser Pro Ile
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Phe Lys Met Ser Ile Arg Asn Trp Val Thr Arg Thr Pro Ser Ser Ser

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Pro Pro Ile Thr Pro Pro Ala Ser Glu Thr Lys Ile Met Ser Pro Arg

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Lys Ala Leu Ile Pro Val Ser Gln Lys Ser Ser Gln Ala Glu Ala Cys

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540

Ser Glu Ser Arg Asn Arg Val Lys Arg Arg Leu Asp Ser Ser Cys Leu

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560

Glu Ser Val Lys Gln Lys Cys Val Lys Ser Cys Asn Cys Val Thr Glu

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570

575

Leu Asp Gly Gln Val Glu Asn Leu His Leu Asp Leu Cys Cys Leu Ala

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585

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Gly Asn Gln Glu Asp Leu Ser Lys Asp Ser Leu Gly Pro Thr Lys Ser

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Ser Lys Ile Glu Gly Ala Gly Thr Ser Ile Ser Glu Pro Pro Ser Pro

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Ile Ser Pro Tyr Ala Ser Glu Ser Cys Gly Thr Leu Pro Leu Pro Leu
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Arg Pro Cys Gly Glu Gly Ser Glu Met Val Gly Lys Glu Asn Ser Ser
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Pro Glu Asn Lys Asn Trp Leu Leu Ala Met Ala Ala Lys Arg Lys Ala
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Glu Asn Pro Ser Pro Arg Ser Pro Ser Ser Gln Thr Pro Asn Ser Arg
675 680 685

Arg Gln Ser Gly Lys Thr Leu Pro Ser Pro Val Thr Ile Thr Pro Ser
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